

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 2, line 1 with the following rewritten paragraph:

-- In particular, as is known, traditional locks basically comprise a closing mechanism, designed to couple, in a releasable way, with the lock striker in order to bring about closing of the door, and a mechanical actuating assembly designed to be connected to the manual-control elements associated to the door of the motor vehicle, such as, for instance, [[the]] an internal handle and [[the]] an external handle and designed for interacting with the closing mechanism for controlling opening thereof.

Please replace the heading beginning at page 3, line 21 with the following rewritten heading:

-- DISCLOSURE SUMMARY OF THE INVENTION

Please delete the paragraph beginning at page 3, line 27:

-- ~~US 5,855,130 discloses a motor vehicle door lock as defined in the preamble of claim 1.~~

Please replace the paragraph beginning at page 4, line 5 with the following rewritten paragraph:

-- According to the present invention, a lock is provided for a door of a motor vehicle, ~~as defined in Claim 1.~~ The lock includes a closing mechanism that is designed for coupling, in a releasable way, with a lock striker for bringing about closing of the door. The closing mechanism includes a mechanical actuating assembly that has an opening means for controlling release of the closing mechanism from the lock striker and a means for inhibiting opening, which in turn includes a first safety member and a second safety member that can be selectively activated for rendering the opening means ineffective from outside and inside the motor vehicle, respectively. The lock also includes an electric-actuator means that includes a first output member coupled with the first safety member. The electric-actuator means is housed in a fluid-tight way in a single casing and

the first output member traverses, in a fluid-tight way, a through hole of the casing for co-operating with the first safety member. The electric-actuator means also includes a second output member coupled with the second safety member. The second output member traverses, in a fluid-tight way, a further through hole of the casing. The casing defines an area for housing a manual control device of the first output member and an additional electrical control device of the second output member, which provides a function of child safety of the lock.

Please replace the paragraph beginning at page 5, line 11 with the following rewritten paragraph:

-- Figure 9 is a cross-sectional view according to the line IX-IX of Figure 8 top plan view, in partial cross section and at an enlarged scale, of the electric-actuator assembly illustrated in Figure 7;

Please replace the heading beginning at page 6, line 1 with the following rewritten heading:

-- ~~BEST MODE FOR CARRYING OUT THE INVENTION~~ DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Please replace the paragraph beginning at page 6, line 15 with the following rewritten paragraph:

-- The lock basically comprises: a closing mechanism 3 (Figure 3, dashed line) designed for coupling, in a releasable way, with the lock striker 2 for bringing about closing of the door; a mechanism actuating assembly 4 designed for being connected to manual-control elements associated to the door of the motor vehicle, such as, for example, [[the]] internal and external handles (not illustrated)[[()]] and designed for interacting with the closing mechanism 3 for controlling release thereof from the lock striker 2; and an electric-actuator assembly 5 for controlling the mechanical actuating assembly 4.

Please replace the paragraph beginning at page 8, line 10 with the following rewritten paragraph:

-- The closing mechanism 3 comprises, in a known way, a fork 15 and a pawl ~~or pawl~~ 16 hinged to respective pins 17, 18, which extend between the portion 10 of the plate 8 and the plate 9. The pins 17, 18 are rigidly fixed to the supporting body 6 and have respective axes A, B orthogonal to the portion 10 of the plate 8 and to the plate 9.

Please replace the paragraph beginning at page 9, line 8 with the following rewritten paragraph:

-- Under the thrust of the lock striker 2 and following upon slamming of the door, the fork 15 rotates about the axis A from the opening position to a closing position (Figure 3), in which the lock striker 2 is blocked in its own seat 20, and the tooth 21 intercepts, in a known way, the openings 13 and 14, preventing the lock striker 2 from coming out.

Please replace the paragraph beginning at page 9, line 15 with the following rewritten paragraph:

-- The pawl 16 is formed by a shaped metal plate coated with plastic material, which extends on the same plane of lie as the fork 15 and on one side of the latter. The pawl ~~[[21]]~~ 16 has an L-shaped lateral projection ~~[[27]]~~ 25, which is designed for snap-action coupling with the tooth 22 of the fork 15 so as to block the fork 15, in a releasable way, in the closing position.

Please replace the paragraph beginning at page 11, line 6 with the following rewritten paragraph:

-- The portion 35 is formed by a projection ~~[[34]]~~, which extends in cantilever fashion from the plane of the opening lever 30 in a direction opposite to the direction of extension of the projection 34, whilst the portion 36 is formed by an arm, which extends in the same plane from one end of the opening lever 20 opposite to the end of hinging to the pin 18.

Please replace the paragraph beginning at page 11, line 17 with the following rewritten paragraph:

-- Finally, the opening lever 30 has a through slot 37 of rectangular profile, the function of which will be clarified in what follows, the ~~[[said]]~~ slot 37 being elongated in the direction of greater extension of the lever 30, i.e., in a direction transverse to the portion 11 of the plate 8.

Please replace the paragraph beginning at page 11, line 23 with the following rewritten paragraph:

-- The actuating mechanism 31 (Figures 1, 4 and 6) comprises an external-control lever 38, which can be connected in a known way (not illustrated) to the external handle of the door and is hinged to the plate 9 around a pin 40 having an axis C parallel to the axes A and B, and a main safety member 41, which can move along the direction of greater extension of the opening lever 30 to provide the external-safety function of the lock 1, i.e., that of inhibition/enabling of the opening of the lock 1 itself by means of the external handle. In particular, the main safety member 41 is mobile with respect to the opening lever 30 between an enabling configuration (external-safety function deactivated, as illustrated in Figure 6, where part of the main safety member 41 is indicated by an internal dashed line), in which the main safety member 41 is set between the opening lever 30 and the external-control lever 38, thus enabling transmission of motion between the levers 30 and 38 and consequently opening of the lock 1 by means of the external handle, and a disabling configuration (external-safety function activated, as illustrated in Figures 4 and 6, where part of the main safety member 41 is without the internal dashed line), in which the main safety member 41 does not enable transmission of motion from the external-control lever 38 to the opening lever 30 and hence inhibits opening of the lock 1 by means of the external handle.

Please replace the paragraph beginning at page 13, line 10 with the following rewritten paragraph:

-- In the proximity of its own end portion 43, the external-control lever 38 has a ~~projection~~ projecting part 44, which, during rotation about the axis C, is designed to set itself partially on top of the slot 37 of the opening lever 30 and to co-operate, via thrust, with the portion 35 of

[[said]] the opening lever 30 by interposition of the main safety member 41 set in the enabling configuration for rotating the opening lever 30 about the axis B.

Please replace the paragraph beginning at page 15, line 5 with the following rewritten paragraph:

-- The actuating mechanism 32 comprises: an internal-control lever 55, which can be connected in a known way (not illustrated) to the internal handle of the door and is hinged to the portion 11 of the plate 8 around a pin [[46]] 56 having an axis D orthogonal to the portion 11 and to the axes A, B and C; a transmission lever [[47]] 57, which is hinged to the plate 9 by means of the pin 18, and is actuated by the internal-control lever 55; and an auxiliary safety member 58, which is constrained in a mobile way to the transmission lever [[50]] 57 and is designed to assume selectively an enabling configuration for opening the lock 1 from inside the motor vehicle (internal-safety function deactivated, as illustrated in Figures 1 and 5, where part of the auxiliary safety member 58 is indicated by an internal dashed line), in which the safety member 58 enables transmission of motion by the transmission lever 57 to the opening lever 30, and a disabling configuration for opening of the lock 1 from inside the vehicle (internal-safety function activated, as illustrated in Figures 4 and 5, where part of the auxiliary safety member 58 is without the internal dashed line), in which the auxiliary safety member 58 prevents actuation of the opening lever 30 by means of the transmission lever 57.

Please replace the paragraph beginning at page 16, line 9 with the following rewritten paragraph:

-- The internal-control lever 55 has, starting from a portion, in which it is hinged to the pin [[46]] 56, a first arm 60, which can be connected, at one end, to the internal handle, and a second arm 61, which extends in the direction of the plate 9 and acts via thrust, at one of its ends, on the transmission lever 57.

Please replace the paragraph beginning at page 17, line 20 with the following rewritten paragraph:

-- The auxiliary safety member 58 is thus able to slide along the arm 64 of the transmission lever 57 in order to assume the aforesaid configurations for enabling and disabling opening of the lock 1 from inside the motor vehicle.

Please replace the paragraph beginning at page 18, line 15 with the following rewritten paragraph:

-- According to an important characteristic of the present invention, the electric-actuator assembly 5 (Figures 1, ~~2 and 7~~ 2, 7 and 9) is housed, in a sealed way, in a casing 70 made of plastic material, which can be fixed on the supporting body 6 and comprises a pair of output shafts 71, 72, which traverse, in a sealed way, respective through holes 73, 74 of the casing 70, which have respective eccentric end pins 75, 76, which can be engaged, respectively, with the ~~fixing~~ fixing holes 53, 67 of the main safety member 41 and auxiliary safety member ~~58~~ 58 of the mechanical actuating assembly 4.

Please replace the paragraph beginning at page 20, line 17 with the following rewritten paragraph:

-- Each device 87, 88 basically comprises an electric motor ~~89~~, 90 and a gear-type reducer 91, 92 set between an output shaft 93, 94 of the electric motor 89, 90 and the corresponding shaft 71, 72.

Please replace the paragraph beginning at page 22, line 6 with the following rewritten paragraph:

-- Each shaft 71, 72 has a first cylindrical end portion 104, 105 set at the side of the corresponding electric motor 89, 90. A prismatic intermediate portion ~~106~~, 107, on each of which there is fitted a corresponding sleeve 108, 109 having an internal conformation that is complementary and is provided, on the outside, with the corresponding toothed sector 97, 98, and a second cylindrical opposite end portion 110, 111, which comes out of the casing 70 and is coupled to the corresponding safety member 41, 58 of the mechanical actuating assembly 4.

Please replace the paragraph beginning at page 23, line 17 with the following rewritten paragraph:

-- In particular, the end element 114 is formed by a cylindrical pin 118, which engages a blind axial hole made in the end portion 110 of the shaft 71 and is provided with an eccentric enlargement 119, from which there projects in cantilever fashion the pin 75. The end portion 110 is, in turn, provided with an eccentric end projection 120, which defines a contrast element for the enlargement 119 of the end element 114. The axial retention of the end element 114 on the shaft 71 is obtained by means of snap coupling between an angular ribbing made on the enlargement 119 and a complementary groove made in the projection 120. The spring 116 is wound externally around the assembly made up of the end portion ~~[[11a]]~~ 110 and the shaft 71 and by the end element 114, has opposite ends fixed to the enlargement 119 and to the end portion 110 itself, and is designed to maintain the projection 120 and the enlargement 119 so that they bear upon one another.

Please replace the paragraph beginning at page 25, line 7 with the following rewritten paragraph:

-- By way of example, in the case where the external handle is operated and simultaneously a command is sent for deactivation of the external-safety function, i.e., the shaft 71 is rotated about its own axis E to displace the main safety member 41 from the disabling configuration to the enabling configuration, it could occur that the aforesaid displacement of the main safety member 41 cannot be performed on account of the presence of the ~~projection~~ projecting part 44 of the external control lever 38 in a position corresponding to the slot 37 of the opening lever 30. In this case, the shaft 71 may in any case perform its own rotation, whilst the pin 75 and the main safety member 41 remain stationary and the spring 116 is loaded. As soon as the impediment to sliding of the main safety member 41 ceases, the spring 116 brings the end element 114 back into the initial angular position with respect to the end portion 110 of the shaft 71, and the main safety member 41 reaches the configuration of safety deactivated. In the case of impediments

that involve the auxiliary safety member 58 and the corresponding shaft 72, operation is altogether similar and hence is not described here for reasons of brevity.

Please replace the paragraph beginning at page 28, line 18 with the following rewritten paragraph:

-- As may be seen in particular in Figures 12 to 14, the portion 132 of the sleeve 109 carries externally, in cantilever fashion, a radial tooth 141, which slidably engages with an angular ~~[[slot]]~~ notch 142 made on an internal surface of the sleeve 133.

Please replace the paragraph beginning at page 29, line 23 with the following rewritten paragraph:

-- According to a preferred embodiment of the present invention (Figures 7 and 8), the casing 70 carries a plurality of microswitches 143, 144, 145, 146 of a known type, in the case in point four, designed to detect, respectively, the position of the fork 15, ~~[[of]]~~ the shafts 71, 72 and ~~[[of]]~~ the key cylinder 82, ~~and an 82.~~ An electrical circuit 147, which connects the microswitches 143, 144, 145, 146 and the electric motors 89, 90 with an electrical connector 148, ~~which~~ is designed to be connected in a known way (not illustrated) to the electrical wiring system of the motor vehicle, and the insulating body 149 of which is integral with the shell 77.

Please replace the paragraph beginning at page 30, line 10 with the following rewritten paragraph:

-- In particular, each microswitch 143, 144, 145, 146 comprises an insulating body 154, which is fixed to the shell 77 within a corresponding housing and from which there ~~project~~ projects an electrical-connection means 150 for connection to the electrical circuit 147 and mechanical actuating means 151 designed to co-operate with the member 15, 71, 72, 82, the microswitch 143, 144, 145, 146 of which is to detect the position.

Please replace the paragraph beginning at page 32, line 5 with the following rewritten paragraph:

-- If the external-safety function is deactivated, i.e., the end 52 of the main safety member 41 engages the part of the slot 37 of the opening lever 30 adjacent to the external-control lever 38 (as illustrated in Figure 6, where the end position 52 is indicated by an internal dashed line), a rotation in a ~~counterclockwise~~ clockwise direction of the external control lever 38 about the axis C causes an action of thrust of the projecting ~~portion~~ part 44 on the end 52 and of the latter on the portion 35 of the opening lever 30, which is thus rotated in a ~~clockwise~~ counterclockwise direction about the pin 18. During rotation of the opening lever 30, the projection 34 intercepts the projection 27 and, via the latter, draws the pawl 16 in the same direction of rotation against the action of the spring 26. In this way, uncoupling of the pawl 16 from the fork 15 is obtained, the ~~[[said]]~~ fork 15 thus being free to rotate towards its own opening position under thrust of the spring 23, so ~~releasing~~ as to release the lock striker 2.

Please replace the paragraph beginning at page 33, line 5 with the following rewritten paragraph:

-- In fact, during rotation in a ~~counterclockwise~~ the clockwise direction of the external-control lever 38 about the axis C, the projecting ~~portion~~ part 44 cannot intercept the end 52 and terminates its own travel in the proximity of the portion 35 of the opening lever 30, without managing to displace it and hence without managing to bring about release of the pawl 16 from the fork 15.

Please replace the paragraph beginning at page 33, line 15 with the following rewritten paragraph:

-- If the internal-safety function is deactivated, i.e., the projection 68 of the auxiliary safety member 58 engages the outermost stretch of the seat 65 of the transmission lever 57 (as illustrated in Figure ~~[[6]]~~ 5, in which the position of the projection 68 is indicated by an internal dashed line), a rotation of the internal-control lever 55 in a clockwise direction about the axis D brings about rotation of the transmission lever 57 in a counterclockwise direction about the axis

B and the consequent action of thrust of the projection 68 on the portion 36 of the opening lever 30, which is then rotated in ~~a clockwise~~ the counterclockwise direction about the pin 18, bringing about, in the way described previously, uncoupling of the pawl 16 from the fork 15.

Please replace the paragraph beginning at page 34, line 23 with the following rewritten paragraph:

-- During rotation of the sleeve 108 about the axis E, the toothed sector 136 draws the toothed sector 135 of the sleeve 133 in rotation with respect to the shaft 72, by rotating, by means of the lever 134, the key cylinder 82 in a counterclockwise direction as viewed in Figure 7. The circumferential edge of the ~~[[slot]]~~ notch 142 of the sleeve 133 slides with respect to the tooth 141 of the sleeve 109, without causing any action on the shaft 72 and on the auxiliary safety member 58 (Figures 12 and 13).

Please replace the paragraph beginning at page 37, line 20 with the following rewritten paragraph:

-- In particular, the reducer 158 comprises a pinion 162, which is fixed to the shaft 159 of the electric motor 157, and a toothed sector 163 fitted on the shaft 160. The transmission 161 comprises a sprocket 164 fitted on the shaft 160 and meshing with a rack 165 made on an end portion of a rod 166, the opposite end of which is set outside the casing 70 and is constrained to a radial arm 167 of the ~~radial end~~ end element 115.

Please replace the paragraph beginning at page 38, line 2 with the following rewritten paragraph:

-- As may be seen in Figures 15 and 16, the portion of the shaft 160, on which the sprocket 164 is fitted, is housed in a position corresponding to the ~~projecting portion~~ projection 86, and the rod 166 traverses, with interposition of a sealed ring of the O-ring type (not visible) similar to the seal rings 103, a through hole 168 made in a portion of the side edge 79 of the shell 77, which

delimits the ~~projecting portion~~ projection 86 itself in the direction of the end portions 110, 111 of the shafts 71, 72.

Please replace the paragraph beginning at page 38, line 12 with the following rewritten paragraph:

-- The rack 165 co-operates with a microswitch 173 similar to the microswitches 143, 144, 145, 146, and is also fixed to the shell 77.

Please replace the paragraph beginning at page 38, line 15 with the following rewritten paragraph:

-- The knob 156 is mounted, in such a way that it can turn, and with interposition of a seal ring 169 of the O-ring type, through a cylindrical tubular sleeve 170, which is fixed to the ~~projecting portion~~ projection 86 of the shell 77 and has, in one end portion thereof, which extends inside the casing 70, a radial appendage 171 hinged to one end of a lever 172, the opposite end of which is hinged to the sleeve 133 in a way altogether similar to that of the lever 134.

Please replace the paragraph beginning at page 38, line 24 with the following rewritten paragraph:

-- In ~~[[the]]~~ light of the above description, it may be noted that, thanks to the housing of all the electrical components of the lock 1, 1' (electric motors 89, 90, 157, microswitches 143, 144, 145, 146, 173, electrical connector 148, and electric circuit 147) inside a single casing 70, the following advantages may be achieved: ~~[[-]]~~ the casing 70 can be closed in a fluid-tight way by means of a perimetral gasket 81 and by means of appropriate seal rings 103, 169 set in positions corresponding to the output holes 73, 74, 168, 170 of the interaction members 71, 72, 166, 156 for interaction with the mechanical ~~[[parts]]~~ actuating assembly 4 of the lock 1, 1'; in this way, it is no longer necessary to use relatively costly fluid-tight electrical components; ~~[[-]]~~ the electric-actuating components 89, 90, 157 and the electrical-sensing components 143, 144, 145, 146, 173

can be easily connected together by means of an electrical circuit 147 housed inside the casing 70; and ~~[[-]]~~ the insulating body 149 of the connector 148, which connects the electrical circuit 147 to the electrical wiring system of the motor vehicle, can be made of a single piece with the casing 70.